

Kingston Ash Recovery Project Natural Resource Damage Assessment and Restoration Decisions

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- Natural Resource Damage Assessment - process, identification of data needs, resources to be considered
- Restoration Planning for embayments and acquired properties

- Defined as the process of collecting, compiling, and analyzing information, statistics, or data through prescribed methodologies to determine damages for injuries to natural resources.
- Affected state, tribal and federal trustee agencies are involved.
- Damage assessments are used to provide the basis for determining restoration needs that address the public's loss and use of natural resources.

Approach to gathering data for NRDA

- Early in the process it was determined that it would be most cost effective to collect any data needed for future NRDA use at the same time as other data
- Trustees were included in Sampling and Analysis Plan development
- Trustees were asked to identify any data gaps that might exist for use of information in damage assessment

Differences in data needs for NRDA vs. other uses

- Detection limits may need to be lower for use in NRDA than for other purposes
- Data needs to provide a clear picture of the potential impact to the ecosystem adjacent to the release
- A baseline condition needs to be established which shows the condition of natural resources and services that would have existed if the incident had not occurred.

Five Categories of Natural Resources

- **Air** – information was available from an extensive air monitoring network
- **Biological resources** – information regarding biological resources was collected for use in development of the BERA and to inform agencies of any impact
- **Groundwater** – the site had a ground water monitoring network in place before the spill and more wells were added after the spill
- **Surface water** – sampling began within hours of the spill and continues. Sediment was also sampled in the affected area and both upstream and downstream of the site.
- **Geologic resources** – soils and other sediments were sampled.



Recovery at 87% Complete



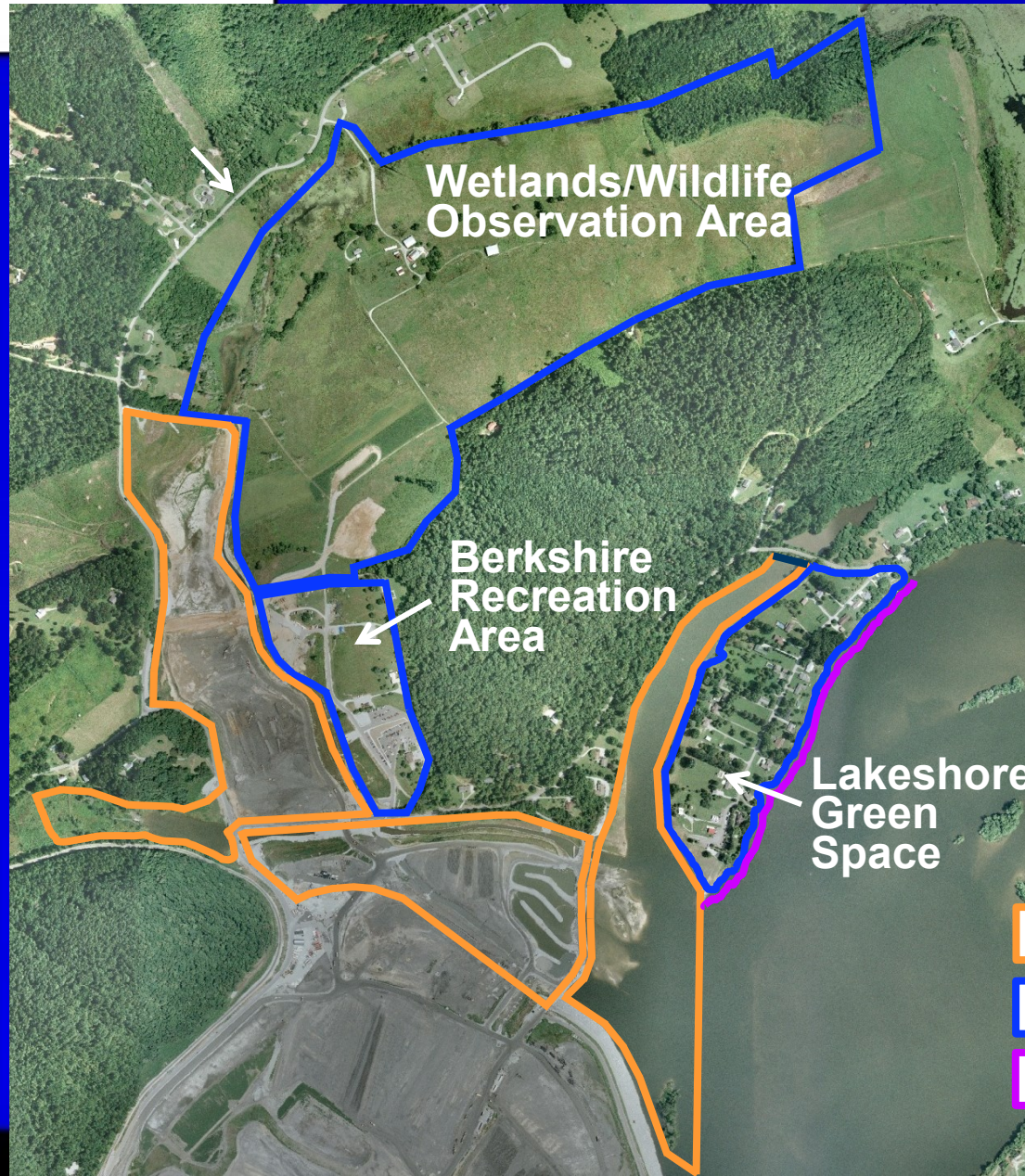
December 23, 2008



August 29, 2013₇



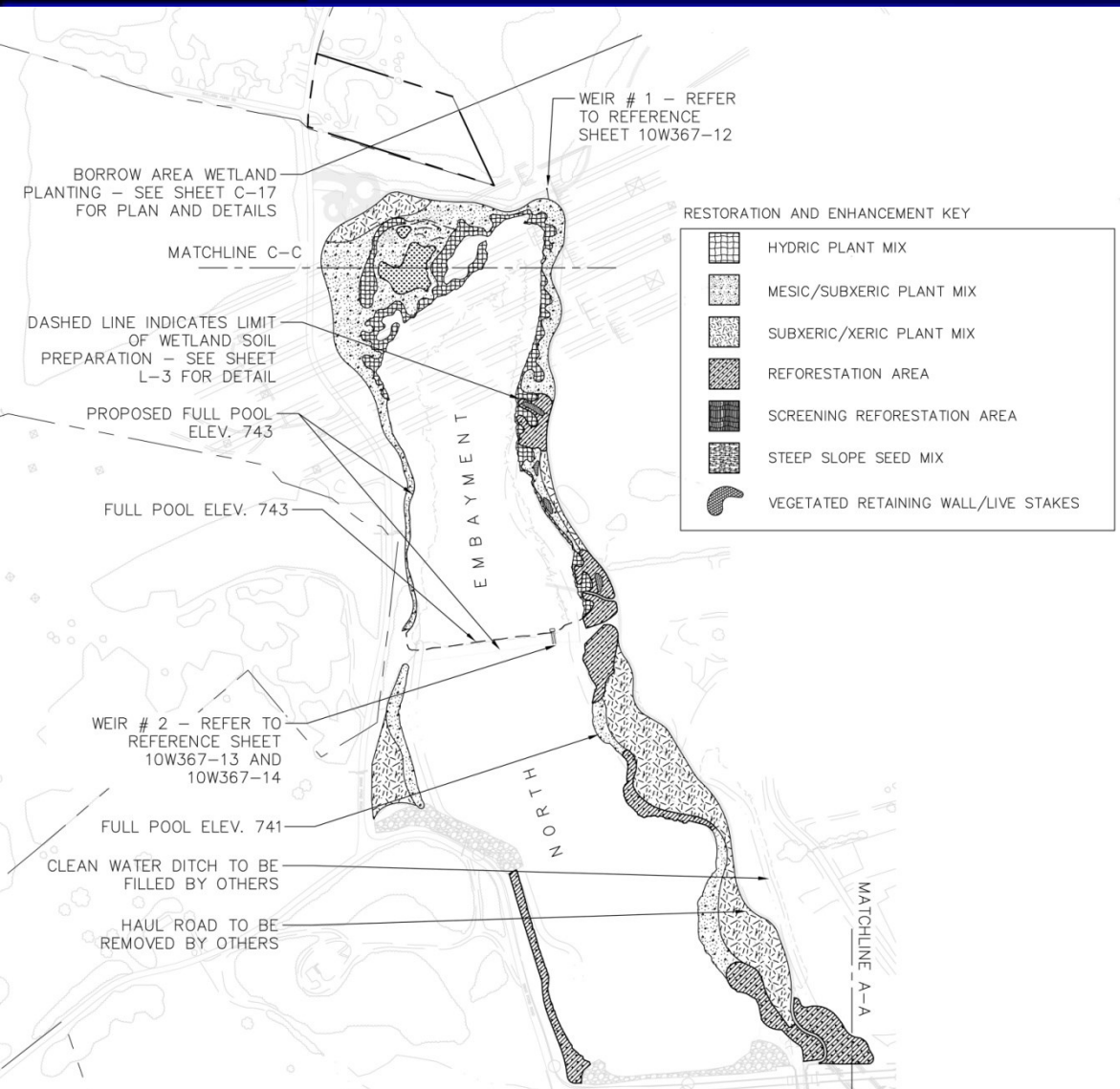
Swan Pond Embayment Restoration & Recreation



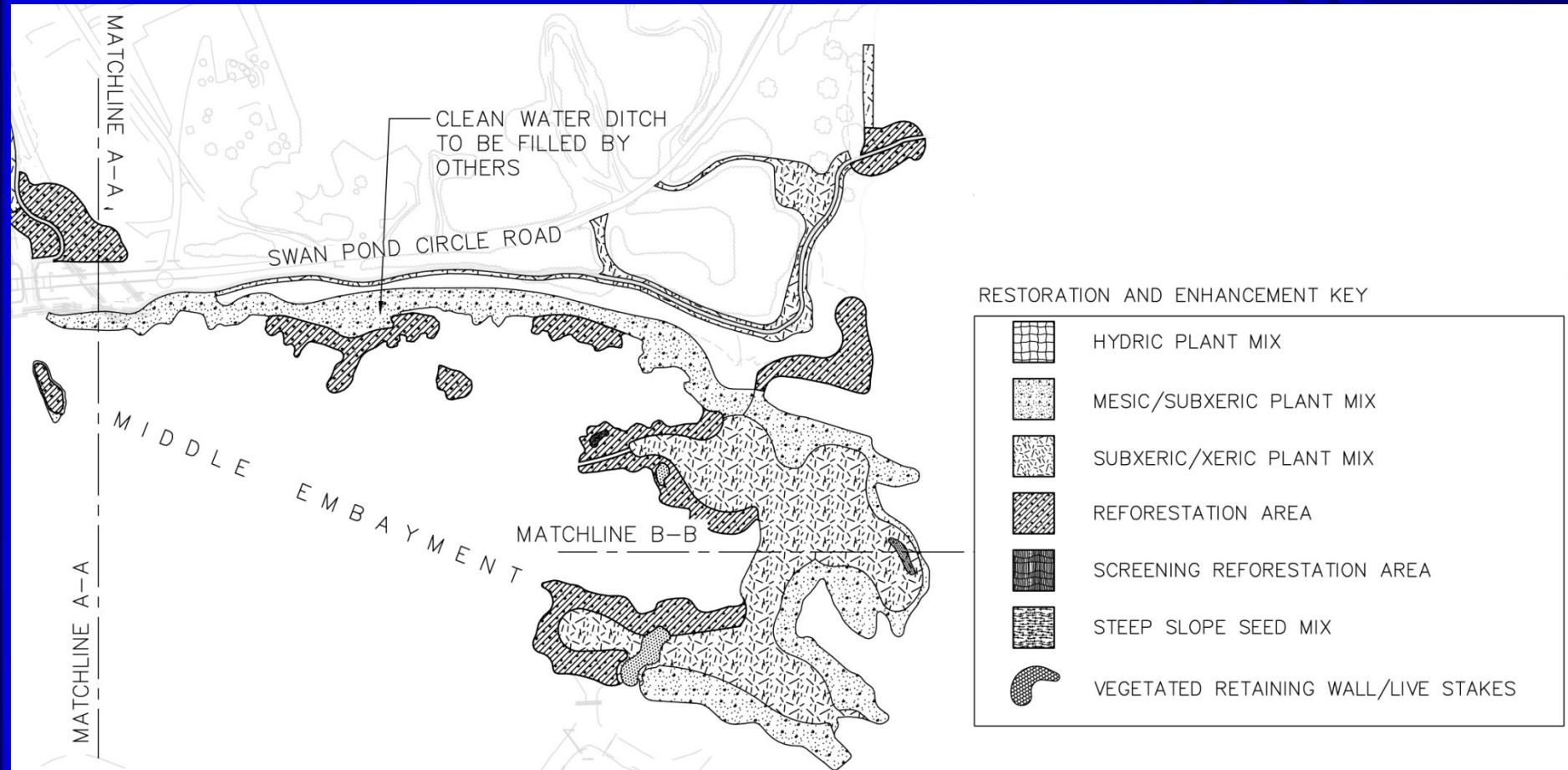
- Embayment restoration
- Recreation Areas
- Wetlands/wildlife observation area

-  Restoration Areas
-  Recreation Areas
-  Emory River Shoreline

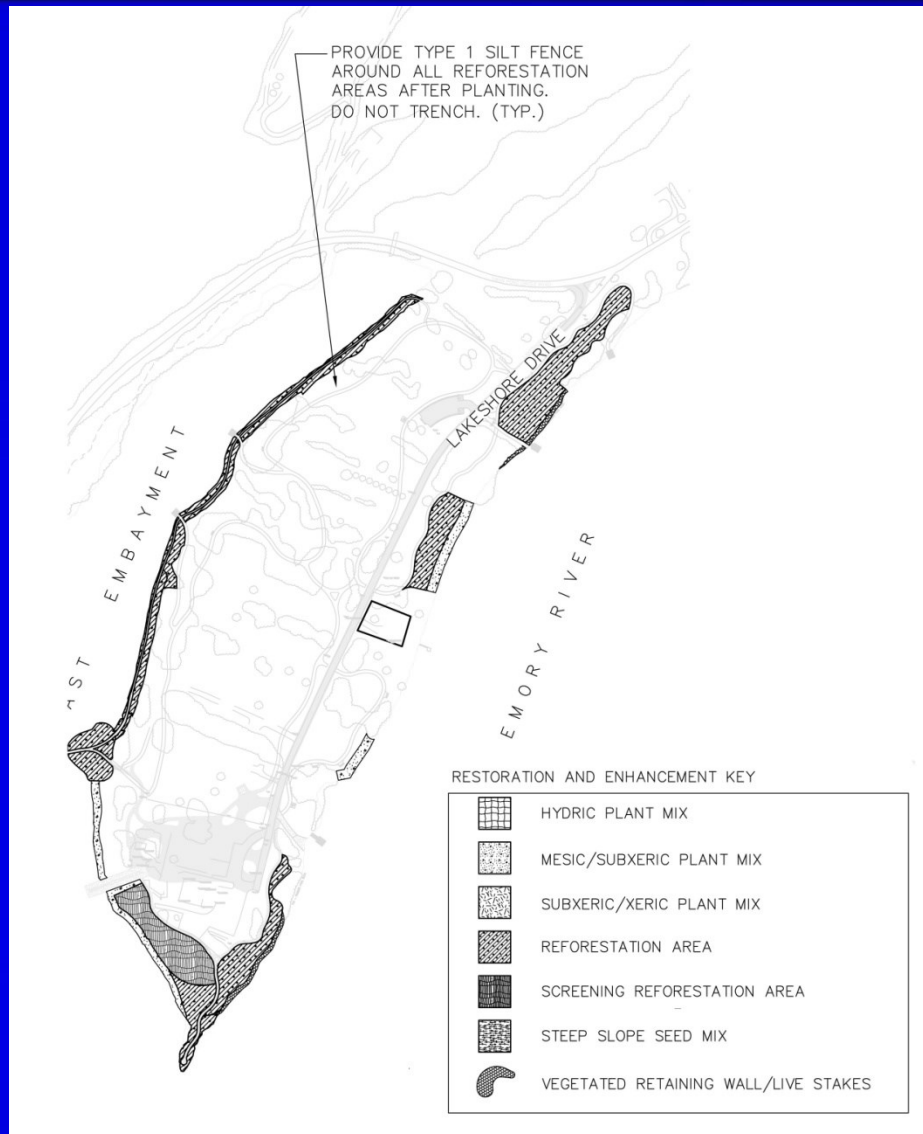
North Embayment Design



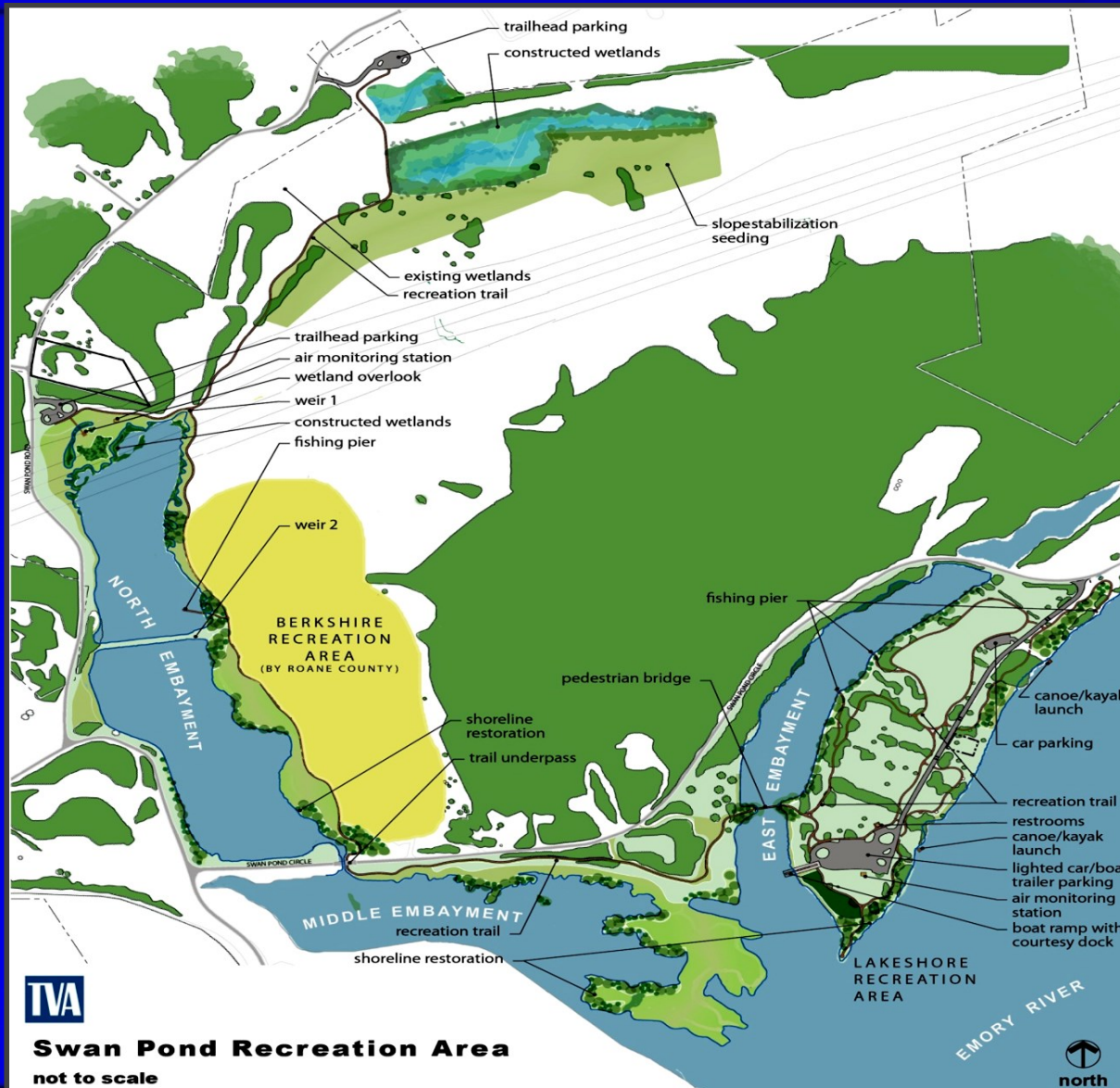
Middle Embayment



East Embayment



Restoration Design



Restoration Status

West Embayment

- Completed

Swan Pond Embayment

- Ecological Restoration work to begin Winter 2013 and complete by Winter 2014

East Embayment

- Work on Recreation Facilities continues this winter, complete by late spring 2014
- Ecological Restoration work Winter 2013
- Consistent with Swan Pond



Swan Pond Embayment Restoration & Recreation

- Phase 1 – Lakeshore Park
 - Construction underway
 - Walking trails, fishing piers & restroom
 - Completed August
- Phase 2 – Lakeshore Park/Middle Embayment
 - Boat ramp, walking bridge, trails & Middle Embayment to start this Fall
 - Final grading and plantings begin this fall

